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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/625,135	07/25/2000	Robert M. Japp	EN9-99-082	8471

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EXAMINER
TUGBANG, ANTHONY D

ART UNIT	PAPER NUMBER
3729	

DATE MAILED: 01/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/625,135	JAPP ET AL.	
	Examiner	Art Unit	
	Dexter Tugbang	3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 October 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) *1-7* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Terminal Disclaimer

1. The terminal disclaimer filed on 10/3/02 (Paper No. 9) disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent 6,201,194 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Request for Reconsideration

2. The Declaration of Common Ownership filed on 10/3/02 (with Paper No. 11) is sufficient to overcome the U.S. Patent 6,201,194 reference. The previous 35 U.S.C. 103 rejection to Lauffer et al and Kessler has been withdrawn.

Election/Restrictions

3. Applicant's election of the invention of Group II in Paper No. 3 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

4. Claims 1-7 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 4.

Specification

5. The abstract of the disclosure is objected to because the abstract is not drawn to the claimed manufacturing method. Correction is required. See MPEP § 608.01(b).

6. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:
(1) if a machine or apparatus, its organization and operation;
(2) if an article, its method of making;
(3) if a chemical compound, its identity and use;
(4) if a mixture, its ingredients;
(5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

7. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: A Method of Fabricating a Laminate Circuit Structure.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 8-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 8, the phrase of "the same dielectric used in said subassemblies" (line 8) lacks positive antecedent basis. Furthermore, the phrase is confusing and misleading as to which term of "dielectric" (1st occurrence at line 4 or second occurrence at line 5) is previously being referred to. Additionally, the term of "dielectric" (1st occurrence at line 4 or second occurrence at line 5) is awkwardly worded and would be considered more favorably if the term were replaced with either –a dielectric—or –a dielectric material--. The same problem above occurs with the term "dielectric" recited in Claim 10 (at line 1).

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 8-12, 14 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Lazzarini et al 4,864,722.

Lazzarini discloses a method of fabricating a laminated circuit structure assembly comprising: providing two modularized circuitized voltage plane subassemblies 10 (in Fig. 4) having two signal planes X, Y disposed about an internal voltage plane 6; providing a dielectric (upper dielectric layer 3) between the signal X and voltage planes 6; providing a dielectric (lower

dielectric layer 3) on each external surface of each signal plane Y; providing a non-cured dielectric composition 7 between the subassemblies; aligning and laminating the subassemblies to cause bonding of the subassemblies (see col. 3, lines 45-55). The non-cured dielectric composition 7 and dielectric 3 used in the subassemblies can be said to be "the same", since each is formed with a low dielectric constant (see col. 3, line 37 and line 51).

Regarding Claims 9 and 14, Lazzarini uses the language of "at least two sub-assemblies" (at col. 3, lines 65-66), which is interpreted that three subassemblies 10 can be laminated together. As such, the middle subassembly 10 can be read as an "interposer" between the voltage plane subassemblies with this middle interposer containing dielectric layers 3 and an internal electrically conductive layer 6. The use of copper as the conductive layer is discussed at col. 3, lines 39-44.

Regarding Claims 10 and 11, the dielectric composition 7 is bonded to any of the dielectrics 3 and the vias 11. as shown in Figure 5.

Regarding Claim 12, the vias are plated with a conductive metal (see col. 4, lines 1-3).

Regarding Claim 16, the top and bottom circuit layers are read as reference planes 9.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lazzarini et al in view of Dux et al 5,224,265.

Lazzarini teaches the claimed manufacturing method as previously discussed. Lazzarini does not teach that the vias are filled with a conductive adhesive.

Dux teaches filling vias with a conductive adhesive 32 to allow compatibility with dielectric bonding (see col. 6, lines 52-55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Lazzarini by including a step of filling the vias with a conductive adhesive, as taught by Dux, to positively provide compatibility with dielectric bonding.

14. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lazzarini et al.

Regarding the claimed thicknesses recited in Claim 15, it would have been an obvious matter of design choice to choose any desired thickness of the interposer since applicants have not disclosed that the claimed thicknesses of 3 to 10 mils solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the thicknesses of the interposer taught by Lazzarini et al.

15. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lazzarini et al in view of Burger et al 4,788,766

Lazzarini teaches the claimed manufacturing method as previously discussed. Lazzarini does not teach the detailed recitations of temperature, time and pressure in Claim 17.

Burger teaches laminating subassemblies with examples of at least a temperature of 156 deg. C, a time of 15 minutes, and a pressure of 125 psi, which falls within the claimed ranges

detailed in Claim 17. The benefits of the specific temperature, time and pressure of Burger provides lamination of subassemblies at very low temperatures and pressures (see col. 1, lines 56-58).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Lazzarini by utilizing the temperature, time and pressure taught by Burger, to positively allow lamination and manufacturing of the subassemblies to occur at very low temperatures and pressures.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dexter Tugbang whose telephone number is 703-308-7599. The examiner can normally be reached on Monday - Friday 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3590 for regular communications and 703-305-3588 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0858.

Dexter Tugbang
Examiner
Art Unit 3729

adt
January 8, 2003